4.4 Cultural and Paleontological Resources

This section of the EIR evaluates the potential for environmental impacts on cultural resources and paleontological resources associated with development of proposed CIP projects under the Master Plans update. Information presented in this section is based upon a cultural resources records search performed by Atkins at the South Coastal Information Center (SCIC) in January 2012 (Atkins 2012); the *City of Carlsbad Water and Sewer Master Plans Cultural Resource Background Study* prepared by Gallegos and Associates in 2003 (Gallegos and Associates 2003); a cultural context generated by D. Gallegos for the *County of San Diego Guidelines for Determining Significance: Cultural Resources – Archaeological and Historic Resources* (Gallegos 2007); the *County of San Diego Guidelines for Determining Significance – Paleontological Resources* (County of San Diego 2007); and additional reference materials to inform the cultural and paleontological setting.

As discussed in Chapter 4, Environmental Analysis, the following CIP projects have been adequately addressed in previous CEQA documents and are not included in this analysis: Sewer CIP Projects SR-6, SR-10, SR-25, N-1, N-2, N-5, N-7, N-8, N-10, N-11, I-3, I-4, I-5, and I-6; Water CIP Projects 7, 8, 40, and R6; and Recycled Water CIP Project ES3.

4.4.1 Environmental Setting

Cultural resources are frequently defined in terms of tangible materials attributed to a culture. These include districts, sites, structures, artifacts, and other evidence of human use considered important to a culture or community for scientific, traditional, religious, or other reasons. Resources may be historical, archaeological, architectural, or archival in nature. Cultural resources may also consist of less tangible attributes, such as landscapes considered sacred to particular groups.

The water, sewer, and recycled water service areas exhibit an extensive record of prehistorical and historical activity as expressed through observable material culture or cultural resources. These resources can provide clues about prehistoric and historic era human behaviors, and provide scientific, religious and other valuable educational information about the cultural past. The following setting information is adapted from work completed by Gallegos and Associates (2003) and Gallegos (2007), unless otherwise noted.

4.4.2 Cultural Setting

4.4.2.1 Prehistoric Setting

Archaeological investigations in this region indicate a diverse range of human occupation activities beginning approximately 10,000 years ago. Recent scholarship on Native American (Pre-Contact) human occupation in San Diego County recognizes the existence of at least two major cultural traditions, based upon general economic trends and material culture. These traditions are identified as the Early Period/Archaic and Late Period.

Early Period/Archaic

The Early Period/Archaic includes the time period spanning from approximately 10,000 to 1,300 years ago, and includes the San Dieguito, La Jolla and Pauma Complexes. Initially believed to represent big game hunters, the San Dieguito are better typified as a hunting and gathering society. These peoples had a diverse and non-specialized economy in which relatively mobile bands accessed and used a wide range of plant, animal, and lithic resources. The material culture of the San Dieguito Complex is primarily characterized by a well developed flake stone component consisting of scrapers, scraper planes, choppers, drills, gravers, large lanceolate bifaces, and large foliate (leaf-shaped) projectile points (Byrd and Raab 2007).

The La Jolla and Pauma Complexes are often referred to as following the San Dieguito Complex. The La Jolla complex is associated with shell midden sites on the coast and within the Carlsbad area, while the Pauma Complex is associated with inland sites, particularly located in valleys and sheltered canyons in northern San Diego County (Moratto 1984). Because the two complexes have similar artifact assemblages, it is believed that the Pauma Complex may represent an inland variant of the La Jolla Complex. Gallegos notes that these complexes may represent a seasonal or geographic variation of an older and more general San Dieguito Complex. This is based upon a pattern of observable cultural continuity exhibited in the material culture assemblages of Early/Archaic Period sites. The La Jolla and Pauma Complexes reflect subsistence patterns focused on gathering plant foods and small animals, including near shore fish and shellfish (Byrd and Raab 2007). Ground stone milling equipment, including manos and metates, appear in large numbers, and dominate their tool assemblages.

The earliest sites are found near coastal lagoons and river valleys of San Diego County. These sites are the Harris Site (CA-SDI-149), Agua Hedionda Sites (CA-SDI-210/UCLJ-M-15 and CA-SDI-10695), Rancho Park North (CA-SDI-4392/SDM-W-49), and Remington Hills (CA-SDI-11069), dating from 9,500 to 8,000 years B.P. The northern San Diego County coastal lagoons supported large populations, circa 6,000 years ago, as shown by the numerous radiocarbon dated sites adjacent to these lagoons. After 3,000 years ago, there is a general absence of archaeological sites in north San Diego County to circa 1,500 years ago. This reduction in number of archaeological sites can be attributed to the siltation of coastal lagoons and depletion of shellfish and other lagoon resources. Archaeological sites dated to circa 2,000 years ago are found closer to San Diego Bay, where shellfish were still abundant and may represent what can be considered the end of the La Jolla Complex.

Late Period

By the advent of the Late Period, a material culture pattern similar to that of historical Native Americans becomes apparent in the archaeological record. Cultural change and social complexity reflects both an adaptation to variations in environmental conditions, as well as an influence from outside groups. The results of these adaptations are shown through changes in material culture, subsistence patterns, and burial practices throughout the period, over time and space. The economic pattern during this period appears to be one of more intensive and efficient use of local resources. The prosperity of these highly refined economic patterns is well evidenced by the numerous Kumeyaay/Diegueño and Luiseño habitation sites scattered throughout San Diego County. This increase in Late Period site density probably reflects both better preservation of the more recent archaeological record and a gradual population increase within the region. Artifacts and cultural patterns reflecting this Late Period pattern include small projectile points, pottery, the establishment of permanent or semi-permanent seasonal village sites, a proliferation of acorn milling sites in the uplands, the presence of obsidian from the Imperial Valley source Obsidian Butte, and interment by cremation.

Luiseño occupation in northern San Diego County during the late Holocene has been viewed as an occupation that migrated from the desert to the coast, an incursion called "the Shoshonean Wedge." Late Period culture patterns were shared with groups along the northern and eastern periphery of San Diego County, incorporating many elements of their neighbors' culture into their own cultures. This transference and melding of cultural traits between neighboring groups makes positive association of archaeological deposits with particular ethnographically known cultures difficult. This is particularly true of the groups within San Diego County. Although significant differences exist between Luiseño and Kumeyaay/Diegueño cultures (including linguistic stock), the long interaction of these groups during the Late Period resulted in the exchange of many social patterns. Archaeologists must rely heavily on ethnographic accounts of group boundaries as recorded during the historical period to inform ethnographic occupation of particular areas.

4.4.2.2 Ethnohistoric Setting

In 1925, ethnographer Alfred Kroeber placed the Kumeyaay/Diegueño and Luiseño boundary between Agua Hedionda and Batiquitos Lagoon (Kroeber 1925). These lagoons are located within the area proposed for the Master Plans CIP projects, placing the project area in a transitional area for the Diegueño and Luiseño groups. Diegueño is recognized as a member of the California-Delta Yuman division of the Yuman-Cochimi language family, and includes three main dialects: Ipai, Kumeyaay, and Tipai (Luomala 1978). The Ipai occupied the central portion of San Diego County, while the Kumeyaay inhabited the southern portion of the county, including lands extending into the California portion of the Colorado Desert. The Tipai territory included the lands from Jamul southward into Baja California, south of Ensenada. Modern ethnographers tend to combine the Kumeyaay and the Tipai as a single, continuous social group. The Luiseño traditional use area is then mapped as extending from the Pacific Ocean inland to Lake Elsinore and Palomar Mountain in the east, and extending from Agua Hedionda in the south to Aliso Creek in the north (Bean and Shipek 1978). The following discussion is based on articles found in Heizer (1978).

Luiseño

The water, sewer, and recycled water service areas are located in the southern portion of the territory associated with the Luiseño, a tribe affiliated with the San Luis Rey Mission in Oceanside. The Luiseño were characterized by the occupation of sedentary villages in subsistence territories that permitted them to reach the majority of their resources within a day walk. Villages were commonly located along valley bottoms, streams, or coastal strands. From October to November, much of the village population moved to temporary camps in the mountains to harvest acorns and hunt game. Inland groups also had fishing and gathering spots on the coast that they visited annually. In comparison with neighboring groups to the north and east, such as the Gabrieliño and Cahuilla, the Luiseño appear to have had higher population density and a more rigid social structure. The Luiseño patterns may have been relatively stable until mission secularization. Instability could have resulted from the policy of the Catholic Mission fathers or padres to maintain imported European traditional style settlement and economic patterns.

Kumeyaay/Diegueño

The water, sewer, and recycled water service areas also include lands associated with various cultural groups, once identified generically and somewhat erroneously as Digueño. Various ethnographies document these geographically diverse groups of peoples. Father Junipero Serra referred to the indigenous population surrounding the Mission San Diego de Alcala as "Dieguino" in 1769, and this term was utilized for over a century. Presently, the terms Ipai and Tipai are utilized to discuss the groups

once collectively referred to as Digueño. Both terms generally translate to "person," and divide this cultural group based upon regional geography within San Diego and Baja California. Tipai typically references peoples in portions of Imperial County and south of the border, and Ipai refers to people on the coast and mountain regions. Also included within these designations is the term Kumeyaay, which is a Digueño word that may have meant the steep ones, or those from the cliffs. This group of peoples was also purportedly named Quemeya by the Yuma, who described them as the people of the western Colorado floodplain, extending to the coast. In 1973, some of the Digueño of southern San Diego County stated a preference for Kumeyaay as their tribal name. Thereafter, the Kumeyaay Tribal Affairs Office was opened in El Cajon and the Kumeyaay Corporation was established.

4.4.2.3 Historic Setting

The historic era (Post-Contact) in southern California is commonly presented in terms of Spanish, Mexican, and American political domination. Certain themes are common to all periods, such as the development of transportation, military activities, settlement, and agriculture.

Spanish Period (1769-1821)

The history of modern San Diego County begins with the earliest Spanish explorations in the area. In 1542, Juan Rodriguez Cabrillo was commissioned by the Viceroy of New Spain to lead an expedition north along the Pacific Coast to search for trade opportunities and a possible way to China. During this exploration, Cabrillo claimed modern Mission Bay for the Spanish Crown, naming the location "San Miguel." Sixty years later, in 1602, Sebastián Vizcaíno was given a mandate from the Viceroy to survey and map the coast of Baja and Alta California. During this mission, Vizcaino surveyed modern Mission Bay and Point Loma, naming the area after the flagship of his small fleet, the *San Diego* (Saint Didacus) (Mathes 1968). Thereafter, the Spanish colonization of California was achieved through a program of military-civilian-religious conquest. Under this system, soldiers secured areas for settlement by suppressing Native and foreign resistance and established fortified structures (presidios) from which the colony would be governed. Civilians established towns (pueblos) and stock-grazing operations (ranchos) that supported the settlement and provided products for export. The missionary component of the colonization strategy was led by Spanish priests, who were charged with converting Native Americans to Catholicism, introducing them to Spanish culture, and training them as a labor force. Ultimately, four presidios and 21 missions were established in Spanish California between 1769 and 1821. In 1798, the Mission San Luis Rey was established 10 miles north of Agua Hedionda Lagoon (Carlsbad 2012).

Mexican Period (1821-1848)

Mexico achieved independence from Spain in 1821, and California became a distant outpost of the Mexican Republic. Under a law adopted by the Mexican congress in 1833, the former mission lands were secularized and subdivided into land grants. In 1843, Juan Maria Romouldo Marron claimed 13,000 acres surrounding the Agua Hedionda Lagoon. Marron and his wife operated several San Diego businesses, and managed the Rancho Agua Hedionda (Carlsbad 2012).

American Period (1848 to Present)

The American Period began in 1848, when Mexico ceded California to the U.S. under the Treaty of Guadalupe Hidalgo. Terms of the treaty brought about creation of the Lands Commission, in response to the Homestead Act of 1851, which was adopted as a means of validating land ownership throughout the state through settlement of land claims. Few Mexican ranchos remained intact because of legal

costs and lack of sufficient evidence to prove title claims, and sale and subdivision of the rancho lands become common. This trend is reflected in changes to the Rancho Agua Hedionda over time, as the lands became available for settlement by immigrants to California. Following Juan Marron's death in 1853, the rancho fell into foreclosure and the rancho lands were sold. Eventually, the lands were subdivided for the heirs of Irish-American Robert Kelly following his death in 1890 (Carlsbad 2012). Then, as the size of the Mexican ranchos dwindled, development in the area was influenced by a variety of factors, including the discovery of gold in the state; the conclusion of the Civil War; the availability of free land through passage of the Homestead Act; and, later, the importance of the county as an agricultural area supported by roads, irrigation systems, and connecting railways. The Southern California Railroad reached the region by the mid-1880s, linking the San Diego and San Bernardino areas, and allowing for the future development of the beach areas of San Diego County.

4.4.2.4 Cultural Resource Records Search

On January 30, 2012, Atkins conducted a cultural resources records search for the CIP project sites at the SCIC (Atkins 2012). The records search examined all proposed sewer, water, and recycled water CIP project sites and adjacent lands within portions of Oceanside, Vista, and San Marcos. As a result, this records search examined the majority of Carlsbad and outlying areas within the CMWD service area. To identify the presence of cultural resources, the cultural records search inventoried the following: The National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), the California State Historic Resources Inventory (HRI), the Office of Historic Preservation, Historic Property Data File (HPDF) for San Diego County, and the SCIC Historic Addresses Database. The sewer, water, and recycled water service areas have been subject to intensive survey efforts during the recent decades, and specifically along existing transportation corridors and in the vicinity of the various lagoons. As a result, a significant percentage of the area has been previously surveyed.

Numerous archaeological resources exist throughout the sewer, water, and recycled water service areas, and are generally equally distributed throughout the areas subject to the various Master Plans. However, the sites can be described as concentrated around and near existing, large water resources, including Buena Vista Lagoon, Agua Hedionda, and Batiquitos Lagoon. Tables 4.4-3 to 4.4-5 (see Impact Analysis) identify the resources which may be impacted by the proposed CIP projects.

The records search also identified historic-age, built-environment resources near the proposed CIP projects and located at physical addresses in Carlsbad. Of particular significance is the Rancho de los Quiotes (Kiotes)/Leo Carrillo Ranch, which is a district listed in the NRHP and CRHR. This resource is comprised of various adobe buildings, a windmill, stable, swimming pool, barbeque, and a fish pond, and many of these resources are contributors to the district, listed in the NRHP by the Keeper, and are listed in the CRHR. This resource is considered significant because it was owned and built by the film actor and California State Parks Commissioner Leo Carrillo in the mid-1930s. The district also represents one of the oldest settlement areas in Carlsbad, and is a State Historical Landmark.

Native American Heritage Commission Records Search

Cultural resources can include properties of traditional religious and cultural significance to groups or individuals, including local Native Americans. Such resources could consist of archaeological resources or areas containing human remains, but can also be comprised of landscapes or features in the natural environment important for their role in oral tradition or in existing religious tradition. These resources

are often different than those detected by professional archaeological surveys or by the review of the existing archaeological record, and often pertain to other perspectives about the presence of Native Americans in the region beyond the prehistoric and historical setting presented above. To acknowledge this perspective, research on the presence or absence of known Native American resources is necessary to fully document existing conditions for cultural resources. In addition, coordination and consultation with affected Native American communities is beneficial to fully understand potential impacts on cultural resources.

Research on the presence of Native American resources was initially completed through a Sacred Lands File (SLF) database search by the Native American Heritage Commission (NAHC). Atkins requested an SLF search on January 27, 2012, and received the results via fax on February 14, 2012 (NAHC 2012). The results of the SLF search indicated that Native American cultural resources were known within the areas proposed for the CIP projects. The sensitivity of the area was further iterated via email and telephone calls between Atkins cultural resources staff and Mr. Dave Singleton of the NAHC in January and February, 2012. Mr. Singleton indicated that Carlsbad was very culturally sensitive, with numerous dated sites in the Carlsbad, Oceanside, and Vista areas. Further, areas within the general vicinity of the Rancho Santa Fe topographic quadrangle contained burials. Thereafter, and as requested by the NAHC, a letter that included a brief description of the project and a project map were sent to each of the NAHC-provided contacts. This letter was sent on February 24, 2012, and requested information about the SLF-listed resources, as well as information about any resources not listed in the SLF for inclusion in this report.

As of the date of this document, one response letter has been received. In a letter dated March 8, 2012, Shasta C. Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, indicated that the proposed project was located on lands considered part of their traditional use area. For this reason, Ms. Gaughen requested that the Tribe be advised of project progress and be added to the receiving list for project updates, reports of investigations, and/or any documentation generated about new or previously recorded sites. Further, Ms. Gaughen noted that the Tribe might recommend archaeological monitoring pending the results of any surveys or records searches associated with the project. She additionally requested notification in the event that the project area expanded beyond the boundaries described in the information-scoping letter.

All correspondence is included in Appendix D of this document.

4.4.2.5 Paleontology

Paleontology is a branch of geology that studies the life forms of the past, particularly now-extinct prehistoric life forms, through the study of plant and animal fossils and traces. As defined, paleontologic resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints, from previous geologic periods. Paleontologic resources include not only the actually fossilized remains, but also the collection localities, and geological formations containing those localities. These paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource.

Paleontological sensitivity refers to the likelihood of finding significant fossils in a specific geological formation. The Conformable Impact Mitigation Guidelines Committee of the Society of Vertebrate Paleontology (SVP) published Standard Guidelines in response to a recognized need to establish

procedures for the investigation, collection, preservation, and cataloguing of paleontologically sensitive sites. These Standard Guidelines are also known as the Potential Fossil Yield Classification, and are widely accepted among paleontologists, followed by most investigators, and identify the two key phases of paleontological resource protection as "assessment" and "implementation." Assessment involves identifying the potential for a project site or area to contain significant nonrenewable paleontological resources that could be damaged or destroyed by project excavation or construction. Implementation involves formulating and applying measures to reduce such adverse effects. The SVP established three sensitivity categories (high, moderate and low) of sedimentary rocks as listed below:

- **Class 5 (High sensitivity):** assigned to geologic formations known to contain paleontologic localities with rare, well-preserved, and/or critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleobiology and phylogeny of animal and plant groups. Generally speaking, highly sensitive formations are known to produce vertebrate fossil remains or are considered to have the potential to produce such remains.

- **Class 4 (Moderate Sensitivity):** assigned to geologic formations known to contain paleontological localities with moderately preserved, common elsewhere, or stratigraphically long-ranging fossil material. The moderate-sensitivity category also is applied to geologic formations that are judged to have a strong but unproven potential for producing important fossil remains (e.g. Pre-Holocene sedimentary rock units representing low to moderate energy, of marine to non-marine depositional settings).

- **Class 3 (Low Sensitivity):** assigned to geological formations that, based on their relative youthful age and/or high energy depositional history, are judged unlikely to produce important fossil remains. Typically, low sensitivity formations may produce invertebrate fossil remains in low abundance.

Two additional categories have been established by San Diego County (2007), as well as the Department of the Interior (U.S. Forest Service 1996).

- **Class 2 (Marginal sensitivity):** assigned to areas where the concern for paleoresources is slightly elevated. This classification is assigned to geologic formations that are composed of either volcanoclastic (derived from volcanic sources) or metasedimentary rocks, but that nevertheless have a very limited probability for producing fossils from certain formations at localized outcrops. Volcanoclastic rock can contain organisms that were fossilized by being covered by ash, dust, mud, or other ejecta from volcanoes. Metasedimentary rocks are sedimentary rocks that have been metamorphosed by heat and/or pressure caused by the actions of volcanoes or by the extrusive plutons. It is very rare that an identifiable fossil can survive metamorphism but they can occur in very limited circumstances. An area designated marginal usually does not require a pre-construction field survey.

- **Class 1 (No potential sensitivity):** assigned to geologic formations that are composed entirely of volcanic or plutonic igneous rock, such as basalt or granite. These formations do not have any potential for producing fossil remains. An area designated Class 1 does not require a pre-construction field survey.

4.4.3 Regulatory Framework

Cultural and resources are protected through a number of regulations at the federal, state, and local levels. Below is a listing and brief description of some of the various regulations and standards that relate to cultural resources.

4.4.3.1 Federal

The National Historic Preservation Act and the National Register of Historic Places

Federal regulations for cultural resources are primarily governed by Section 106 of the NHPA of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are listed or determined eligible for listing on the NRHP. The criteria for determining NRHP eligibility are found in 36 Code of Federal Regulations (CFR) Part 60. The NRHP criteria (36 CFR 60.4) are used to evaluate resources when complying with Section 106 of the NHPA. Those criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and any of the following:

- Are associated with events that have made a significant contribution to the broad patterns of our history
- Are associated with the lives of persons significant in our past
- Embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction
- Have yielded or may be likely to yield, information important to history or prehistory

The Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation

The purpose of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation of 1983 is to: 1) to organize the information gathered about preservation activities; 2) to describe results to be achieved by federal agencies, states, and others when planning for the identification, evaluation, registration and treatment of historical properties; and 3) to integrate the diverse efforts of many entities performing historical preservation into a systematic effort to preserve the nation's culture heritage.

Native American Graves Protection and Repatriation Act

Enacted in 1990, Native American Graves Protection and Repatriation Act (NAGPRA) conveys to American Indians of demonstrated lineal decent, the human remains and funerary or religious items that are held by federal agencies and federally supported museums, or that have been recovered from federal lands. It also makes the sale or purchase of American Indian remains illegal, whether or not they derive from federal or Indian lands.

American Antiquities Act

The American Antiquities Act prohibits appropriation, excavation, injury, or destruction of "any historic or prehistoric ruin or monument, or any object of antiquity" located on lands owned, controlled, or funded by the federal government. The Act established penalties for such actions and sets forth a permit requirement for collection of antiquities on federally owned lands. Objects of antiquity are considered

by a number of federal agencies to include fossils or other paleontological remains. The Act has been amended specifically to allow funding for paleontological mitigation. Natural or paleontological resources on privately owned land are currently not subject to the federal law.

Paleontological Resources Conservation Act

The Paleontological Resources Conservation Act protects paleontological resources on federally owned lands and limits collection vertebrate fossils and other rare and scientifically significant fossils on those lands to quailed resources with a permit from the appropriate state or federal agency.

Omnibus Public Land Management Act – Paleontological Resources Protection Act (Public Law 111-01. P.L. 111-01, Title VI, Subtitle D)

The Paleontological Resources Preservation Act (PRPA) requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on Federal land using scientific principles and expertise and the development of plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. The PRPA includes specific provisions addressing management of these resources by the Bureau of Land Management, the National Park Service, the Bureau of Reclamation, the Fish and Wildlife Service, and the U.S. Forest Service of the Department of Agriculture. The PRPA affirms the authority for many of the policies the Federal land managing agencies already have in-place for the management of paleontological resources such as issuing permits for collection paleontological resources, curation of paleontological resources, and confidentiality of locality data. The statute establishes new criminal and civil penalties for fossil theft and vandalism for Federal lands. The PRPA only applies to Federal lands and does not affect private lands.

4.4.3.2 State

California Register of Historical Resources

Historical resource is a term with a defined statutory meaning (refer to PRC Section 21084.1 and CEQA Guidelines, Section 15064.5(a) and (b)). The term applies to any resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR). The CRHR includes California resources listed in or formally determined eligible for listing in the NRHP, as well as certain CHLs and CPHIs. The CRHR criteria for listing define historical resources as any object, building, structure, site, area, place, record, or manuscript that:

- Is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
- Meets any of the following criteria:
  - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  - Is associated with the lives of persons important in our past;
  - Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
  - Has yielded, or may be likely to yield, information important in prehistory or history.

  (CEQA Guidelines, Section 15064.5(a)(3))

California Native American Graves Protection and Repatriation Act

The California NAGPRA (Cal NAGPRA) 2001 conveys to American Indians of demonstrated lineal descent, the human remains and funerary items that are held by state agencies and museums.

PRC 5097-5097.6 – Archaeological, Paleontological and Historical Sites

PRC Section 5097-5097.6 outlines the requirements for cultural resource analysis prior to the commencement of any construction project on state lands. This section identifies that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. It prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands, and provides for criminal sanctions. This section was amended in 1987 to require consultation with the NAHC whenever Native American graves are found. Violations for the taking or possessing remains or artifacts are felonies.

PRC 5097.5(a)) states, in part, that:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.

PRC 5097.9-5097.991 – Native American Heritage

PRC Section 5097.9-5097.991 identifies that no public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the U.S. Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require it. In addition, this section details the composition and responsibilities of the NAHC. The NAHC strives for the preservation and protection of Native American human remains, associated grave goods, and cultural resources. The NAHC has developed a strategic plan to assist the public, development community, local and federal agencies, educational institutions and California Native Americans to better understand problems relating to the protection and preservation of cultural resources and to serve as a tool to resolve these problems and create an awareness among lead agencies and developers of the importance of working with Native Americans. PRC Sections 5097.91 and 5097.98 were amended by State Assembly Bill 2641 in 2006. This bill authorizes the NAHC to bring an action to prevent damage to Native American burial grounds or places of worship and establishes more specific procedures to be implemented in the event that Native American remains are discovered.

Health and Safety Code Sections 7050.5 - Human Remains

HSC Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any

nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in section 5097.98 of the Public Resources Code.

4.4.3.3 Regional

County of San Diego Grading Ordinance

Chapter 4 of the County of San Diego Grading Ordinance (Section 87.101 et seq.) includes requirements for the maximum slope allowed for cuts and fills, drainage terraces on cut or fill slopes, exceeding 40 feet in height, expansive soils for cuts and fills, minimum building setbacks from cut and fill slopes, and a soil engineer's report which includes specific approval of the grading as affected by geological factors.

Section 87.430 of the County Grading ordinance provides for the requirement of a paleontological monitor at the discretion of the County. In addition, the suspension of grading operations is required upon the discovery of fossils greater than 12 inches in any dimension. The Grading Ordinance also required notification of the County Official (i.e., Permit Compliance Coordinator), and gives said County Official the authority to determine the appropriate resource recovery operations, which shall be carried out prior to the County Official's authorization to resume normal grading operations.

4.4.3.4 Local

City of Oceanside General Plan

Cultural resources are addressed in the Environmental Resource Management Element of the Oceanside General Plan (Oceanside 2002). The General Plan identifies a goal to evaluate the state of the environment and formulate a program of planned management, wise utilization, and preservation of our natural resources to ensure the health, safety, and welfare of present and future generations. This goal includes cultural sites. The City's objective for cultural sites is to encourage the conservation and protection of significant cultural resources for future scientific, historical and educational purposes.

City of San Marcos General Plan

Cultural resources are addressed in the Conservation and Open Space Element of the San Marcos General Plan (San Marcos 2011). The General Plan identifies Goal COS-11, which is to continue to identify and evaluate cultural, historical, archaeological, paleontological, and architectural resources for protection from demolition and inappropriate actions.

4.4.4 Project Impacts and Mitigation

4.4.4.1 CIP Projects Addressed in Previous CEQA Documents

As discussed in Chapter 4, Environmental Analysis, the CIP projects listed below within Table 4.4-1 have been adequately addressed in previous approved and certified CEQA documents, including impacts and mitigation pertaining historical, archaeological, paleontological resources, and human remains. No further analysis of these CIP projects is required for this EIR. In addition, the Quarry Creek Master Plan EIR (EIR 11-02) is currently being prepared which includes Water CIP Project N-9, Water CIP Project 55, and Recycled Water CIP Project ES7. The Vancouver Street HDD Sewer Pipeline MND is also currently being prepared and includes Sewer CIP Project SR-14. Because these documents have not been made available for public review, these projects are addressed in this EIR. However, if these projects are not ultimately approved and developed, these CIP projects would not be constructed.

Table 4.4-1 CIP Projects Adequately Addressed in Previous CEQA Documents

Master Plan	Previous CEQA Document
Sewer CIP Projects	
SR-6	Final EIR for the Robertson Ranch Master Plan (EIR 03-03; SCH #2004051039)
SR-10	NOE for the Terramar Lift Station and Force Main Replacement (EA 10-10)
SR-25	NOE for the Home Plant Lift Station and Force Main Replacement (CDP 11-07/CUP 11-02)
N-1	Final EIR for the Cantarini/Holly Spring Developments (EIR 02-02; SCH #2002101081)
N-2	Final EIR for the Cantarini/Holly Spring Developments (EIR 02-02; SCH #2002101081)
N-5	Final EIR for the Robertson Ranch Master Plan (EIR 03-03; SCH #2004051039)
N-7	Final EIR for the Dos Colinas Project (EIR 09-01; SCH #2009111085)
N-8	Final EIR for the Robertson Ranch Master Plan (EIR 03-03; SCH #2004051039)
N-10	Final EIR for the Ponto Beach Front Village Vision Plan (EIR 05-05)
N-11	Final EIR for the Calavera Hills Master Plan Phase II, Bridge and Thoroughfare District No.4 & Detention Basins (EIR 98-02; SCH #99111082)
I-3	MND for the Agua Hedionda Sewer lift Station & Gravity Force Mains (SCH #2010081053)
I-4	MND for the Agua Hedionda Sewer lift Station & Gravity Force Mains (SCH #2010081053)
I-5	MND for the Agua Hedionda Sewer lift Station & Gravity Force Mains (SCH #2010081053)
I-6	MND for the Buena Vista Lift Station Sewer Force Main (VC-4) (SCH #2009021085)
Water CIP Projects	
7	Final EIR for the Calavera Hills Master Plan Phase II, Bridge and Thoroughfare District No.4 & Detention Basins (EIR 98-02; SCH #99111082)
8	Final EIR for the Calavera Hills Master Plan Phase II, Bridge and Thoroughfare District No.4 & Detention Basins (EIR 98-02; SCH #99111082)
40	Final EIR for the Robertson Ranch Master Plan (EIR 03-03; SCH #2004051039)
R6	NOE for the Maerkle Reservoir Pressure Control Hydroelectric Facility (CMWD Project No. 5025)
Recycled Water CIP Projects	
ES3	Final EIR for the Calavera Hills Master Plan Phase II, Bridge and Thoroughfare District No.4 & Detention Basins (EIR 98-02; SCH #99111082)

4.4.4.2 Issue 1 – Historical and Archaeological Resources

Cultural and Paleontological Resources Issue 1 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans cause a substantial adverse change in the significance of an historical resource or cause a substantial adverse change in an archaeological resource pursuant to Section 15064.5?

Impact: Construction activities associated with construction of the proposed CIP projects, such as grading, trenching, and clearing have the potential to adversely affect archaeological resources within the project area.	**Mitigation:** Cultural Resources Investigation (Cul-1).
Significance Before Mitigation: Potentially significant.	**Significance After Mitigation:** Less than significant.

Standards of Significance

Historical Resources

Based on Appendix G of the CEQA Guidelines, implementation of the Master Plans would have a significant adverse impact if it would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. CEQA requires evaluation of project impacts on historical resources, including properties "listed in, or determined eligible for listing in, the California Register of Historical Resources [or] included in a local register of historical resources."

A "substantial adverse change" means "demolition, destruction, relocation, or alteration of the resource such that the significance of an historical resource would be materially impaired" [Public Resources Code, Section 5020.1(q)]. The setting of a resource should also be taken into account in that it too may contribute to the significance of the resource, as impairment of the setting could affect the significance of a resource. Material impairment occurs when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA. [CEQA Guidelines, Section 15064.5(b)(2)]
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant.

Archaeological Resources

Implementation of the Master Plans may have a significant impact if it would cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5. Archaeological resources include resources that the Lead Agency determines meet at least one

of the criteria listed in PRC Section 21082.2(g). PRC Section 21083.2(g) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historical event or person.

As defined in PRC Section 21083.2(h), a "non-unique archaeological resource" means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g) above. A non-unique archaeological resource is not considered significant pursuant to CEQA Guidelines Section 15064.5(c)(4) and need be given no further consideration, other than the simple recording of its existence by the Lead Agency if it so elects.

Impact Analysis

Various built-environment historical resources (buildings or structures aged 45 years old or older) and numerous archaeological sites exist within the water, sewer, and recycled water service areas. As part of the cultural resources records search for the Master Plans, the presence of known historical and archaeological resources was evaluated for areas potentially impacted by the proposed CIP project sites. The results of the records search are discussed below.

Historical Resources

Several historical, built-environment resources are known near the proposed CIP projects and are located at physical addresses in Carlsbad. Of particular significance is the Rancho de los Quiotes (Kiotes)/Leo Carrillo Ranch, which is a district listed in the NRHP and CRHR. This resource is comprised of various adobe buildings, a windmill, stable, swimming pool, barbeque, and a fish pond, and many of these features are contributors to the district, listed in the NRHP by the Keeper, and are listed in the CRHR. This resource is considered significant because it was owned and built by film actor and California State Parks Commissioner Leo Carrillo in the mid-1930s. The district also represents one of the oldest settlement areas in Carlsbad, and is a State Historical Landmark. This resource is located in the immediate vicinity of segments related to proposed Sewer Master Plan CIP Project SR-22. However, future access roads installed under CIP Project SR-22 would be located entirely in existing trails and dirt roads. Construction of the access roads would not result in the disturbance or alteration of this historical resource. Impacts to historical resources from implementation of the Master Plans are considered less than significant.

Archaeological Resources

Unintentional Disturbance of Unknown Archaeological Resources

Based on a programmatic assessment, the CIP projects listed below within Table 4.4-2 would not be expected to result in any impacts to known archaeological resources. The rationale for the

determination is also provided in Table 4.4-2. These projects are not located in the proximity of a known archaeological resource, and would only result in ground-disturbing construction activities in previously disturbed soils. Archaeological resources in the previous development footprint would most likely have been removed or destroyed by previous construction. However, due to the numerous archaeological resources of varying sizes that are located within the water, sewer, and recycled water service areas, as well as the results of the NAHC records search, the entirety of the service areas are considered to exhibit high archaeological resource sensitivity. Therefore, any ground-disturbing activities would have some risk of unintentionally uncovering previously unknown archaeological resources. If archeological resources are unintentionally uncovered by the construction of any project, the City and CMWD have committed to the following procedure for the accidental discovery of archaeological resources, as listed in Section 2.6.2, Project Design Features. Implementation of this project design feature would reduce potential impacts as a result of unintentional disturbance of unknown archaeological resources to a less than significant level:

- If subsurface cultural resources are encountered during CIP project construction, or if evidence of an archaeological site or other suspected cultural resources are encountered, all ground-disturbing activity will cease within 100 feet of the resource. A qualified archaeologist will be retained by the City or CMWD to assess the find, and to determine whether the resource requires further study. The assessment shall include consultation with the NAHC or Native American Tribe. Any previously undiscovered resources found during construction will be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and evaluated by a qualified archaeologist retained by the City or CMWD for significance under all applicable regulatory criteria. No further grading will occur in the area of the discovery until the City and CMWD approves the measures to protect the resources. Any archaeological artifacts recovered as a result of mitigation will be donated to a qualified scientific institution approved by the City or CMWD where they would be afforded long-term preservation to allow future scientific study.

Proximity to Known Cultural Resources or Disturbance in Undeveloped Areas

The remaining CIP projects that are not listed in Table 4.3-2 are either in the proximity of known archaeological resources, or would result in ground-disturbing activities in previously undeveloped areas. As previously stated, the entirety of the service areas are considered to exhibit high archaeological resource sensitivity. Known cultural resources that may be affected by the construction of proposed CIP project sites are listed by Master Plans in Tables 4.4-3 to 4.4-5. A table that identifies which CIP projects would have the potential to impact each resource is available in Confidential Appendix D2. This appendix is available to qualified viewers at the City of Carlsbad, 1635 Faraday Avenue, Carlsbad, CA 92008. These resources are predominately prehistoric archaeological sites of varying sizes and occupancy duration, and exhibit prehistoric material culture through midden and scatters of lithic and groundstone tools. Some of the identified sites in Tables 4.4-3 to 4.4-5 are considered historical resources pursuant to CEQA because they retain the potential to yield data important to prehistory or history (Criterion 4 of the CRHR).

Table 4.4-2 CIP Projects Where Impacts are Minimized through Implementation of Project Design Features

CIP Projects			Rationale for Determination
Sewer	**Water**	**Recycled Water**	
N-6, N-12	2, 19, 21, 22, 25, 44, 49, 50, 54, F8, F12, F14, PS1, PS2, 51, 52, 39, 45	ES1, ES2, ES3, ES4A, ES4B, ES4C, ES5A, ES6, ES8, ES9, ES10, ES11, ES12, ES13, ES14, ES15, ES16, ES17, ES18, P73, P74, P75, P78, P80, P81	These CIP projects involve installation of new facilities located entirely within existing disturbed and/or developed land. Archaeological resources in the previous development footprint would have been removed or destroyed by previous construction. Therefore, the proposed CIP projects would not result in additional impacts to archaeological resources in these areas.
C-1, C-2, C-3, C-4, I-2, SR-1, SR-2, SR-5, SR-8, SR-13, SR-15, SR-18	34, 38, 41, 43,44, 54, 56, F1, F2, F3, F5, F6, F7, F9, F10, F11, F15, R1, R2, R3, R4, R5, R7, PS4	P79	These CIP projects involve repair, maintenance, replacements, upsize, improvements, and/or other minor modifications to existing facilities, and are located entirely within existing disturbed and/or developed land. Archaeological resources in the previous development footprint would have been removed or destroyed by previous construction. Therefore, the proposed CIP projects would not result in additional impacts to archaeological resources in these areas.
	46	P77	These CIP projects involve realignment or relocation of existing facilities and are located entirely within existing disturbed and/or developed land. Archaeological resources in the previous development footprint would have been removed or destroyed by previous construction. Therefore, the proposed CIP projects would not result in additional impacts to archaeological resources in these areas.
N-4, SR-21			These CIP projects involve extensions to existing pipeline facilities and are located entirely within existing disturbed and/or developed land. Archaeological resources in the previous development footprint would have been removed or destroyed by previous construction. Therefore, the proposed CIP projects would not result in additional impacts to archaeological resources in these areas.
SR-3, SR-16, SR-17, SR-20, SR-24, I-1			These CIP projects involve rehabilitation of existing manholes or pipeline facilities using in-place rehabilitation and/or cured-in-place lining methods that do not require land disturbance or other activities that could significantly impact existing archaeological resources.
SR-11, Vancouver Lift Station Abandonment, Simsbury Lift Station Abandonment	PS3		These CIP projects involve removal of existing facilities that are located entirely within existing disturbed and/or developed land. Archaeological resources in the previous development footprint would have been removed or destroyed by previous construction. Therefore, the proposed CIP projects would not result in additional impacts to archaeological resources in these areas.

Table 4.4-2 CIP Projects Where Impacts are Minimized through Implementation of Project Design Features (continued)

CIP Projects			Rationale for Determination
Sewer	**Water**	**Recycled Water**	
C-5, SR-4, SR-7	R8	P76	These CIP projects involve condition assessment, monitoring, or treatment of existing facilities and do not require land disturbance or other activities that could significantly impact existing cultural resources.
E-1, E-2			These CIP projects are located at the Encina Water Pollution Control Facility and involve activities that do not require land disturbance or other activities that could significantly impact existing cultural resources.

Source: Atkins 2012

Table 4.4-3 Cultural Resources that may be Affected by the CIP Project Construction

Identification Number	Cultural Resource Description
Sewer CIP Projects	
CA-SDi-6140	Prehistoric – A shell midden with an associated lithic scatter, including lithic tools. As observed in the field in 1980 and via a section of the site in an escarpment, the site exhibits a depth of at least 30-centimeters. The site was relocated in 2010, and was found to contain a lithic scatter with darkened soils indicative of existing midden deposits. The potential for a subsurface component may indicate the need for a testing program to determine the significance of this resource in the future.
CA-SDi-9655	Prehistoric – A shell and lithic scatter with a well-developed midden. The site was partially relocated in 2010, and a shell scatter was observed.
CA-SDi-18917	Prehistoric – A shell scatter with midden soils, a single flake and one sherd of pottery. This site was subjected to a subsurface testing program consisting of 8 STPs in 2009. One of the STPs yielded subsurface artifacts; however, the remainder of the site appears to have been disturbed by modern development.
CA-SDi-9701	Prehistoric and Historical age – A shell processing site described as containing a large, very important midden and considerable potential to contain cultural deposits in the 1970s and early 1980s. This site was partially tested via 29 STPs and two test units in 1997, and was found to contain a variety of lithic and groundstone tools, as well as historical era nails, ammunition and lumber. The results of the testing program indicated that the site is somewhat similar to other known shell processing sites in the area; however, the site contained a significant sample of obsidian. The presence of this material rendered it possible that the site may contain information important to prehistory. Therefore, the site was found to be potentially significant.
37-016255	Prehistoric – Isolated Find consisting of one granitic biface.
CA-SDi-5793H	Historical age – The Rancho de los Quiotes to Mission San Luis Rey trail. This horseback trail was used by the family of Matthew Kelly to visit family homesteads, and continued to near the Mission where the family attended Protestant services in a local house.
CA-SDi-12807 (CA-SDi-600; -601; -602)	Prehistoric – Three smaller sites combined into one sizeable shell scatter with fire-affected rock, groundstone tools, flaked stone tools, and debitage. Portions of the site have been subjected to testing in 1986, and radiocarbon dates were obtained for two of the site loci. CA-SDi-600 was dated to 900 +/-70 B.P. and CA-SDi-601 was dated to 1,100 +/- 70 B.P.
37-017444	Historical age – The historical age Rancho de los Quiotes (Kiotes)/Leo Carrillo Ranch includes an adobe ranch house with associated structures built in the mid-1930s by actor Leo Carrillo. The district represents one of the oldest settlement areas in Carlsbad, and is a State Historical Landmark. Further, the Rancho is listed in the NRHP and CRHR. The district includes a variety of resources which have been assigned a National Register Status (NRS) of 1D, such as a windmill, swimming pool, fish pond, carriage house, grain storage, cantina, caretaker's house, wash house, and main adobe. An NRS of 1D indicates that these resources are contributors to a district or multiple resource property listed in the NRHP by the Keeper and are all listed in the CRHR.

Table 4.4-3 Cultural Resources that may be Affected by the CIP Project Construction (continued)

Identification Number	Cultural Resource Description
CA-SDi-5651	Prehistoric – A large shell midden site incorporating several smaller sites within the immediate vicinity. Lithic debitage, tools, and groundstone tools were noted in association with the midden deposit. Excavations were noted within the area, but not specifically outlined within the site boundaries.
CA-SDi-9472	Prehistoric – A shell scatter with associated basalt flakes. The site is described as observable only within various rodent mounds, which may indicate that the area is covered by fill soils.
CA-SDi-9473	Prehistoric – A shell scatter with associated basalt flakes and possible fire-cracked rock. The site is described as observable only within various rodent mounds, which may indicate that the area is covered by fill soils.
CA-SDi-9474H	Historical age – The remnants of a building, including two privy features and a refuse scatter. The refuse appeared to date the site to before the 1920s.
CA-SDi-5652	Prehistoric and Historical age – A late prehistoric period habitation site subjected to a subsurface testing program in 1999. The testing program included the excavation of 30 STPs and six test units, and recovered a variety of artifacts and detected two features. Radiocarbon dating at the site ranged from 1,330 to 1,970 years B.P. The historical age component consists of an adobe house known as the Marron/Hayes adobe, a pump house, and an associated refuse scatter.
CA-SDi-9967	Prehistoric – A shell scatter with associated fire-cracked rock, a metate fragment, two cores, and one flake described as a habitation site.
CA-SDi-5438	Unknown – A possible rock cairn with no associated artifacts.
Water CIP Projects	
CA-SDi-5782	Prehistoric – An encampment location initially described via an ethnographic resource as occupied prior to the removal of local Native Americans to the reservation in 1879. In 1999, the area was found to contain a lithic scatter reflecting Late Prehistoric occupation which had been disturbed by agricultural activities.
CA-SDi-9092	Prehistoric – A midden site containing faunal remains, groundstone tools, and flaked lithics. This site was subjected to a subsurface testing program via 15 STPs and three test units in 2001. The results of the testing program indicated that the site reflected a Late Prehistoric field camp lacking a substantial subsurface deposit or the potential to yield additional information important to prehistory. For these reasons, the site was recommended as ineligible for inclusion in the NRHP.
CA-SDi-15546	Prehistoric – A shell scatter with some darkened soils, associated flakes, and a chopper. The site is described as having a low potential to yield additional data in 1998.
CA-SDi-15545	Prehistoric – A shell scatter with some darkened soils, associated groundstone tools, flaked lithic tools, and debitage. The site is described as disturbed by agricultural activity and as having a low potential to yield additional data in 1998.
CA-SDi-8195 (CA-SDi-4358 and CA-SDi-6149)	Prehistoric – This very large site combines several smaller, previously recorded sites. The site contains shell concentrations and scatters, ceramics, lithics, rock concentrations, and hearths. In addition, midden was reported at this site encompassing at least a 50 acre area. Portions of the site have been subjected to various testing and excavation programs, and at least one burial was detected as a result of these studies. Recorders also indicted that there was a high likelihood for encountering additional burials in association with the site. One testing program included STPs and one test unit, and found a small portion of the site ineligible for listing in the CRHR or in any local registers. A data recovery project is described in the records as occurring in 1991 for the entire site; however, the results of this program are not outlined in the site records for CA-SDi-8195.
CA-SDi-5651	Prehistoric – A large shell midden site incorporating several smaller sites within the immediate vicinity. Lithic debitage, tools, and groundstone tools were noted in association with the midden deposit. Excavations were noted within the area, but not specifically outlined within the site boundaries.
CA-SDi-9967	Prehistoric – A shell scatter with associated fire-cracked rock, a metate fragment, two cores, and one flake described as a habitation site.
CA-SDi-5438	Unknown – A possible rock cairn with no associated artifacts.
Recycled Water CIP Projects	
CA-SDi-634	Prehistoric – A scatter of 23 manos, hammerstones, and lithic debitage. The site was subjected to limited subsurface testing via two test pits in 1958, and the potential for subsurface deposits was noted.

Source: Atkins 2012

In addition to CIP projects that are in close proximity to known archaeological resources, there is a high potential for CIP projects that would occur within undeveloped areas to encounter unrecorded archaeological resources due to the frequency of known and recorded archaeological sites throughout the service areas. Ground-disturbing activities, such as clearing, trenching, and grading have the potential to damage or destroy archaeological resources that may be present on or below the ground surface, particularly in areas that have not previously been disturbed. Any such unrecorded prehistoric archaeological sites may require research or testing programs to determine their eligibility for inclusion in registers of significant resources. Based upon the NAHC SLF database search, historic-age Native American resources are also known in the area, and may be affected by the proposed CIP project sites.

Table 4.4-4 lists the CIP projects that are within close proximity to known archaeological resources or would occur in undeveloped areas.

Table 4.4-4 CIP Projects with Potential to Result in Significant Impacts to Known Archeological Resources or Would Occur in Previously Undisturbed Areas

Master Plan	Rationale for Determination
Sewer CIP Projects	
SR-9	Sewer CIP Project SR-9 would require refurbishment and/or replacement activities at existing sewer lines and manholes at locations throughout the sewer service area that are not determined at this time. Some of the known sewer lines and manholes within the service area are located in previously undisturbed areas. This evaluation assumes that the activities could occur within an undeveloped area that could include unknown archaeological resources. Potential impacts could occur to unknown archaeological resources during project construction.
SR-12	Sewer CIP Project SR-12 would require the relocation of an existing sewer line adjacent to Agua Hedionda Lagoon and adjacent to an undeveloped area. This project is located in close proximity to a known cultural resource. Therefore, ground-disturbing construction activities would have the potential to impact known archaeological resources during project construction.
SR-14	This CIP project involves installation of new facilities in previously undisturbed areas. This evaluation assumes that the activities could occur within an undeveloped area that could include unknown archaeological resources. Although this project would implement trenchless construction methods (e.g., jack and bore) and setbacks to avoid existing biological resources, some ground-disturbing construction could occur in undisturbed areas outside of sensitive habitat. Potential impacts could occur to unknown archaeological resources during project construction.
SR-19	Sewer CIP Project SR-19 would require construction of a decomposed granite or gravel access road to accommodate maintenance access and provide a public trail adjacent to Batiquitos Lagoon and within an undeveloped area. This evaluation assumes that the activities could occur within an undeveloped area that could include unknown archaeological resources. Potential impacts could occur to unknown archaeological resources during project construction.
SR-22	Sewer CIP Project SR-22 would require construction of 12 foot wide decomposed granite or gravel access roads within existing easements or trails to accommodate access for maintenance and assessment at existing manholes throughout the sewer, water, and recycled water areas. A number of planned access road alignments associated with SR-22 occur within undeveloped areas and in close proximity to known archaeological resources. Potential impacts could occur to known and unknown archaeological resources during project construction.
SR-23	Sewer CIP Project SR-23 would require construction of 12 foot wide decomposed granite or gravel access roads, pipeline relocation, and/or pipeline realignment along an existing sewer alignment adjacent to Encinas Creek. Portions of CIP Project SR-23 occur within an undeveloped area. This evaluation assumes that the activities could occur within an undeveloped area that could include unknown archaeological resources. Potential impacts could occur to unknown archaeological resources during project construction.
N-3	Sewer CIP Project N-3 would require construction of sewer pipelines within areas that are currently undeveloped, but planned for future public roadways associated with the Mandana property. A known cultural resources has been identified in the proximity of this project. Potential impacts could occur to known and unknown archaeological resources during project construction.

Table 4.4-4 CIP Projects with Potential to Result in Significant Impacts to Known Archeological Resources or Would Occur in Previously Undisturbed Areas (continued)

Master Plan	Rationale for Determination
N-9	Sewer CIP Project N-9 would require construction of sewer pipelines within areas that are currently undeveloped, but planned for future public roadways. A known cultural resource has been identified in the proximity of this project. Potential impacts could occur to known and unknown archaeological resources during project construction.
Water CIP Projects	
10	Water CIP Project 10 would require construction of water pipelines within areas that are currently undeveloped, but planned for future public roadways. A known cultural resource has been identified in the proximity of this project. Potential impacts could occur to known and unknown archaeological resources during project construction.
17	Water CIP Project 17 would require construction of water pipelines within areas that are currently undeveloped, but planned for future public roadways. A known cultural resource has been identified in the proximity of this project. Potential impacts could occur to known and unknown archaeological resources during project construction.
47	Water CIP Project 47 would require construction of water pipeline to connect to an existing reservoir, portions of which, could occur within an undeveloped area. This evaluation assumes that the activities could occur within an undeveloped area that could include unknown archaeological resources. Potential impacts could occur to unknown archaeological resources during project construction.
48	Water CIP Project 48 would require replacement or rehabilitation of water pipelines within an existing disturbed, dirt access road located within undeveloped land in the Calavera Hills area. Construction activities would occur adjacent to an undeveloped area. A known cultural resource has been identified in close proximity to the project. Due to the presence of a known resource, potential impacts could occur to a known archaeological resource during project construction.
55	Water CIP Project 55 would require construction of water pipelines within areas that are currently undeveloped, but planned for future public roadways. A known cultural resource has been identified in the proximity of this project. Potential impacts could occur to known and unknown archaeological resources during project construction.
Recycled Water CIP Projects	
ES7	Recycled Water CIP Project ES7 would require construction of recycled water pipelines within areas that are currently undeveloped, but planned for future public roadways. A known cultural resource has been identified in the proximity of this project. Potential impacts could occur to known and unknown archaeological resources during project construction.

The alteration of known significant or unique archaeological resources may result in a loss of valuable information that could be gained from the resources, or prevent potentially eligible sites from being listed on a register of cultural resources. In the event that buried significant or unique cultural resources are discovered during construction, such resources could be damaged or destroyed, potentially resulting in significant impacts to cultural resources. The project design feature identified in Section 2.6.2 for unintentional disturbance of unknown resources would minimize impacts as a result of unintentional discovery in previously undisturbed areas. Though unlikely, this project design feature would also minimize impacts as a result of unintentional discovery in disturbed areas. However, due to the higher potential of encountering sensitive cultural resources in undisturbed areas, additional precautions are necessary. For these reasons, construction of the CIP projects listed in Table 4.4-4 would have the potential to result in significant impacts to archaeological resources.

Mitigation Measure

Based on a programmatic analysis, the following CIP projects would require ground-disturbing activities that could result in direct impacts to known cultural resources or would occur within previously

undisturbed areas. Therefore, construction activities associated with these CIP projects could have potentially significant impacts to archaeological resources:

- **Sewer CIP Projects:** SR-9, SR-12, SR-14, SR-19, SR-22, SR-23, N-3, and N-9
- **Water CIP Projects:** 10, 17, 47, 48, and 55
- **Recycled Water Projects:** ES7

Implementation of mitigation measure Cul-1 would minimize impacts to archaeological resources as a result of construction of these CIP projects to the extent feasible.

Cul-1 **Cultural Resources Investigation.** For the CIP projects proposed in close proximity to a known cultural resource or projects that would result in ground-disturbing activities in a previously undisturbed area (Sewer CIP Projects SR-9, SR-12, SR-14, SR-19, SR-22, SR-23, N-3, and N-9; Water CIP Projects 10, 17, 47, 48, and 55; and Recycled Water Project ES7), a project-level cultural resources investigation shall be conducted by a qualified cultural resource professional who ~~minimally~~ meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology. The cultural resources investigation shall include:

1. A CIP project site-specific review of the records search data at the South Coastal Information Center shall be conducted to determine if the CIP project site has been subjected to a professional survey.

   a. If a current cultural resources report addressing potential impacts on cultural resources is available, the City or CMWD shall implement the mitigation measures provided within the report. In the event that a current and valid report is not available or if the entirety of the CIP project site has not been professionally surveyed, then an updated records search shall be performed.

   b. The City or CMWD shall contact the NAHC and local tribal governments for input on the project in order to identify any additional Native American resources that may not be included in the records search.

2. For those CIP project site(s) not addressed by a current cultural resources report (produced within five years of project proposal), a project-level Phase I Cultural Resources Survey shall be prepared. Updates for all resources encountered during the Phase I survey shall be recorded using Department of Parks and Recreation (DPR) 523 forms in accordance with all applicable regulations. Resources shall be evaluated for significance and eligibility for inclusion in all applicable historic registers using methods such as, but not limited to, subsurface testing and/or archival research. Any subsurface testing would be monitoring by an appropriate Native American monitor.~~The City or CMWD shall contact the NAHC and local tribal governments for input on the project in order to identify any additional Native American resources that may not be included in the records search.~~

3. In the event that such resources are found to be historical resources pursuant to CEQA, potential adverse impacts must be analyzed as stated in PRC Sections 21084.1 and 21083.2(l). Suitable mitigation for significant effects on archaeological resources are outlined in Section 15126.4(b)(3). The City or CMWD shall be responsible for implementing the methods for eliminating or substantially reducing impacts on resources as

recommended by the archeologist and~~/or~~ in consultation with the Native American Tribe. Such methods could include, but are not limited to:

a. Planning construction to avoid archaeological sites;
b. Incorporation of sites within parks, greenspace, or other open space;
c. Capping or covering a site with a layer of soil before building on the site;
d. Deeding the site into a permanent conservation easement;
e. Excavation (Data Recovery) of archaeological resources; and/or
f. Construction monitoring by a qualified professional and ~~, if necessary,~~ appropriate Native American monitors as identified through ~~the information-scoping process and/or by~~ consultation with the NAHC or Native American Tribe. The monitor(s) shall be present at all pre-construction meetings.

4. If, as a result of Cul 1(3), it is determined that a CIP project site requires monitoring by a Native American Tribe, then the City or CMWD shall enter into a Pre-Excavation Agreement or Cultural Resource Treatment and Monitoring Agreement with the appropriate Native American Tribe prior to the commencement of earth disturbing activities.
5. If excavation (Data Recovery) is recommended as a result of Cul-1(3), all excavated Native American artifacts shall be repatriated to the Native American Tribe of Most Likely Descendant (MLD) rather than curated.
6. The results of the cultural resources investigation shall be compiled into a technical report or memorandum and submitted to the City or CMWD and the South Coastal Information Center.

Significance After Mitigation

Impacts related to archaeological resources would be reduced to a less than significant level with the implementation of mitigation measure Cul-1.

4.4.4.3 Issue 2: Human Remains

Cultural and Paleontological Resources Issue 2 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans disturb any human remains, including those interred outside of formal cemeteries?

Impact: Compliance with PRC §5097.98 and California State Health and Safety Code 7050.5 would ensure less than significant impacts to any human remains inadvertently discovered during CIP project construction.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts would be less than significant without mitigation.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, implementation of the Master Plans would have a significant impact if it would disturb any human remains, including those interred outside of formal cemeteries. Section 15064.5(d) and (e) of the CEQA Guidelines assigns special importance to human remains and specifies certain procedures when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98.

Impact Analysis

Formal cemeteries are known within the service areas; however, none of the CIP projects are proposed within their boundaries. Therefore, it is not expected that construction activities at CIP sites would disturb formal cemeteries. At least one known and previously recorded archaeological site located within the footprint of a proposed CIP site included a human burial (CA-SDi-8195 [CA-SDi-4358 and CA-SDi-6149]), which indicates that there is a potential for human remains to be present on the site or in the surrounding area. In addition, the NAHC has indicated that human burials are located within and near the service areas and beyond the boundaries of formal cemeteries. Sections 15064.5(d) and (e) of the CEQA Guidelines assign special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98. The disturbance of any human remains is considered a significant impact, regardless of archaeological significance or association. Any ground disturbing activities associated with implementation of the Master Plans, including grading, trenching, and excavation during construction of CIP projects, would have the potential to unintentionally disturb human remains, resulting in a significant impact. Implementation of the required protocol in accordance with PRC Section 5097.98 and California State Health and Safety Code Section 7050.5, to be followed upon unintentional disturbance of human remains, would minimize potential impacts on human remains. California State Health and Safety Code Section 7050.5 dictates that no further disturbance will occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined by the County Coroner to be Native American, the NAHC will be notified within 24 hours, and the guidelines of the NAHC will be adhered to in the treatment and disposition of the remains. A professional archaeologist with Native American burial experience will conduct a field investigation of the specific site and consult with the ~~Most Likely Descendant (~~MLD~~)~~, if any, identified by the NAHC. As necessary and appropriate, a professional archaeologist will be retained by City or CMWD to provide technical assistance to the MLD, including but not limited to, the excavation and removal of the human remains. Compliance with California State Health and Safety Code Section 7050.5 and PRC Section 5097.98 would reduce any potential impacts to human remains from the Master Plans to a level below significance and no further mitigation would be required.

Mitigation Measures

Impacts related to the unintentional disturbance of human remains would be less than significant. No mitigation is required.

Significance After Mitigation

Impacts related to the unintentional disturbance of human remains would be less than significant without mitigation.

4.4.4.4 Issue 3: Paleontology

Cultural and Paleontological Resources Issue 3 Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature?

Impact: Construction of the proposed CIP projects within the Santiago formation has the potential to disturb or destroy paleontological resources.	**Mitigation:** Paleontological Resources Investigation (Pal-1).
Significance Before Mitigation: Potentially significant.	**Significance After Mitigation:** Less than significant.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, implementation of the Master Plans would have a significant impact if CIP construction projects would directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature. Because paleontological resources are typically buried and, therefore, not apparent until revealed by excavation, significant impacts to paleontological resources are often determined based on the geological formations that would be disturbed and the potential for those geologic formations to contain fossils.

Impact Analysis

To evaluate the impacts of the Master Plans, information on paleontological resources evaluation was reviewed for the area (Burwasser 2010; Kennedy and Tan 2002). According to this data, the service areas contain one geologic unit of high paleontological sensitivity: the Santiago formation. The Santiago formation is primarily located within the central portion of the service areas.

The Santiago formation consists of sandstone and conglomerate throughout most of its exposed areas (Kennedy and Moore 1971). The local exposures of the Santiago formation are finer-grained and muddier in the southern part of San Diego County. Petrified wood of avocado and other types of trees and smaller plants along with numerous molluscan and foraminiferan faunas indicate a coastal lowland paleoenvironment. Numerous species of vertebrates have been recovered from the local Santiago formation including fish, turtles, lizards, opossum-like marsupials, insectivores, primitive mammals (*pantoledstidae* sp.), primates, carnivores, several types of rodents, rhinos, tapir, camels, orodonts, and several species of *artiodactylae* (Fisk and Roeder 1996, Lander 1988, and Walsh 1996). Thousands of vertebrate specimens have been recovered and catalogued from this formation, attesting to the significance of this geologic unit.

Excavation and construction activities associated with proposed CIP projects located within the Santiago formation have the potential to disturb or destroy paleontological resources. Figure 4.4-1 depicts the CIP projects proposed within the Santiago formation as Class 5, Areas of High Sensitivity. Unconsolidated Quaternary deposits (Class 3 sensitivity) occur in the valleys, on the lower hillside, and ocean beaches of the service areas. The more ancient hill and ridge rocks of igneous (Class 1 sensitivity)

or meta-volcanic (Class 2 sensitivity) are also identified in Figure 4.4-1. None of the proposed CIP projects occur within a Paleontological Class 4 (moderate sensitivity) soil type.

Sewer CIP Projects

The Sewer CIP projects proposed in areas of high (Class 5) paleontological sensitivity include N-9, N-12, SR-14, SR-22, SR-23, and I-1. CIP Projects C-2, C-3, SR-3, and SR-24 are also located within or near the Santiago formation; however, these projects would be located entirely within an existing roadway or other development footprint. The ground has already been disturbed in order to construct the existing development. Therefore, paleontological resources in these areas would be expected to have already been found or destroyed and the proposed CIP projects would not result in additional impacts to paleontological resources. SR-17 and SR-20 would also be located near or within this formation, but would rehabilitate existing pipelines using a cured-in-place pipeline and would not result in additional ground-disturbing activities. Other than the Santiago formation, the geological units identified within the sewer service area are not expected to contain recoverable paleontological resources. Therefore, for proposed Sewer CIP projects that are within or near undeveloped areas of the Santiago formation (N-9, N-12, SR-14, SR-22, SR-23, and I-1), impacts are considered potentially significant (Burwasser 2010).

Water CIP Projects

The Water CIP projects proposed in areas with high paleontological sensitivity include 10, 17, 48, and F3. CIP Projects 19, 21, 25, 49, F2, F3, and F12 are also located within or near the Santiago formation; however, these projects would be located entirely within an existing roadway or other development footprint. As described update Sewer CIP Projects, potential paleontological resources in these areas have already been disturbed and the proposed CIP projects would not result in additional impacts to paleontological resources. Additionally, CIP Project PS4 would be located within this formation, but would not result in any ground disturbing activities because it would add an additional pump to an existing facility. For the Water CIP projects that are within or near undeveloped areas of the Santiago formation (10, 17, 48, and F3), impacts are considered potentially significant (Burwasser 2010).

Recycled Water CIP Projects

The Recycled Water CIP projects proposed in areas with high paleontological sensitivity include ES1, ES4B, ES4C, ES5A, ES6, and ES15, ES16, ES17, ES18. However, these projects would be located entirely within an existing roadway or other development footprint. As described update Sewer CIP Projects, potential paleontological resources in these areas have already been disturbed and the proposed CIP projects would not result in additional impacts to paleontological resources. Therefore, impacts to paleontological resources from the Recycled Water Master Plan would be less than significant.

Mitigation Measure

Based on a programmatic analysis, the following CIP projects could have a potentially significant impact to paleontological resources:

- **Sewer CIP Projects:** N-9, N-12, SR-14, SR-22, SR-23, and I-1
- **Water CIP Projects:** 10, 17, 48, and F3

Implementation of mitigation measure Pal-1 would minimize potential impacts associated with the disturbance of paleontological resources.

Pal-1 **Paleontological Resources Investigation.** For the proposed CIP projects (Sewer CIP Projects N-9, N-12, SR-14, SR-22, SR-23, and I-1; and Water CIP Projects 10, 17, 48, and F3) which are located within the Santiago formation, a project-level paleontological resources investigation shall be conducted by a qualified professional paleontologist in cooperation with the County of San Diego and the San Diego Natural History Museum. The paleontological resources investigation shall include:

1. A review of the records search data for the City and CMWD service area and, if necessary, an updated records search;
2. Project-level pedestrian surveys of portions of the proposed CIP sites where paleontological resources could be encountered based on presence and depth of the sensitive formations;
3. Formal evaluation of any potentially affected paleontological resources to determine whether they qualify as unique paleontological resources; and
4. Recommended measures to avoid, where feasible, impacts on unique paleontological resources, such as preservation in place, planning construction to avoid unique paleontologic sites, placing paleontological sites into permanent conservation easements, or planning parks, green space, or other open space to incorporate paleontological sites. Where avoidance or preservation in place is not feasible, excavation and curation may be recommended as mitigation.
5. The results of the paleontological resources investigation shall be compiled into a technical report or memorandum and submitted to the City or CMWD for further coordination with the San Diego Natural History Museum, as necessary.

Significance After Mitigation

Impacts related to paleontological resources would be less than significant with the implementation of mitigation measure Pal-1.

4.4.5 Cumulative Impacts

Cultural and Paleontological Resources Cumulative Issue Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans have a cumulatively considerable contribution to a cumulative cultural and paleontological resources impact considering past, present, and probable future projects?

Cumulative Impact	Significance?	Project Contribution
Regional loss of historic and archaeological resources.	Yes	Not cumulatively considerable with implementation of Cul-1.
Regional loss of human remains.	No	No cumulative impact.
Regional loss of paleontological resources.	Yes	Not cumulatively considerable with implementation of Pal-1.

4.4.5.1 Historical and Archaeological Resources

The geographic context for the analysis of cumulative impacts to archaeological and historic resources is the service areas, which includes approximately 40-square miles of land with a similar archaeological, ethnohistoric, and historic setting as the individual CIP project sites. Ground disturbance (e.g., grading, trenching, excavation) associated with implementation of cumulative projects could have significant impacts on archaeological and historical resources. Therefore, the baseline cumulative impact to archaeological and historical resources due to future development within the planning area (i.e., regional cumulative impact area) is significant. As discussed in Section 4.4.3.1 above, implementation of the Master Plans has the potential to result in significant impacts to archaeological resources. However, implementation of mitigation measure Cul-1 would reduce these potential impacts to a less than significant level. Therefore, construction associated with the Master Plans would not result in a cumulatively considerable contribution to the loss of archaeological or historical resources within the regional cumulative impact area.

4.4.5.2 Human Remains

The geographic context for the analysis of cumulative impacts to human remains is the service areas, which includes approximately 40-square miles of land with a similar archaeological, ethnohistoric, and historic setting as the individual CIP project sites. Ground disturbance (e.g., grading, trenching, excavation) associated with implementation of a cumulative project could have significant impacts on human remains through the discovery of unidentified human remains during construction activities. However, similar to the present Master Plans, all cumulative projects would be required to comply with PRC Section 5097.98 and California State Health and Safety Code 7050.5. As discussed in Section 4.4.4.2 above, implementation of the Master Plans would comply with PRC Section 5097.98 and California State Health and Safety Code 7050.5. Therefore, the proposed Master Plans, in combination with other cumulative projects, would not result in a cumulative impact because compliance with these regulations would reduce impacts on human remains during construction activities to a less than significant level.

4.4.5.3 Paleontological Resources

The geographic context for the analysis of cumulative impacts to paleontological resources encompasses the paleontologically sensitive geologic formations within the sewer, water, and recycled water service areas. Excavation activities associated with land development within these areas could have significant impacts to paleontological resources. The baseline cumulative impact to paleontological resources caused by excavation activities associated with further land development within the regional cumulative impact area is significant. As described in Section 4.4.4.3 above, excavation activities associated with proposed CIP project construction ~~and located~~ within the Santiago formation have the potential to disturb or destroy paleontological resources. Implementation of mitigation measure Pal-1 would avoid or preserve paleontological resources if encountered as a result of excavation or construction activities. Therefore, implementation of the Master Plans would not result in a cumulatively considerable contribution to the loss of paleontological resources within the regional cumulative impact area.

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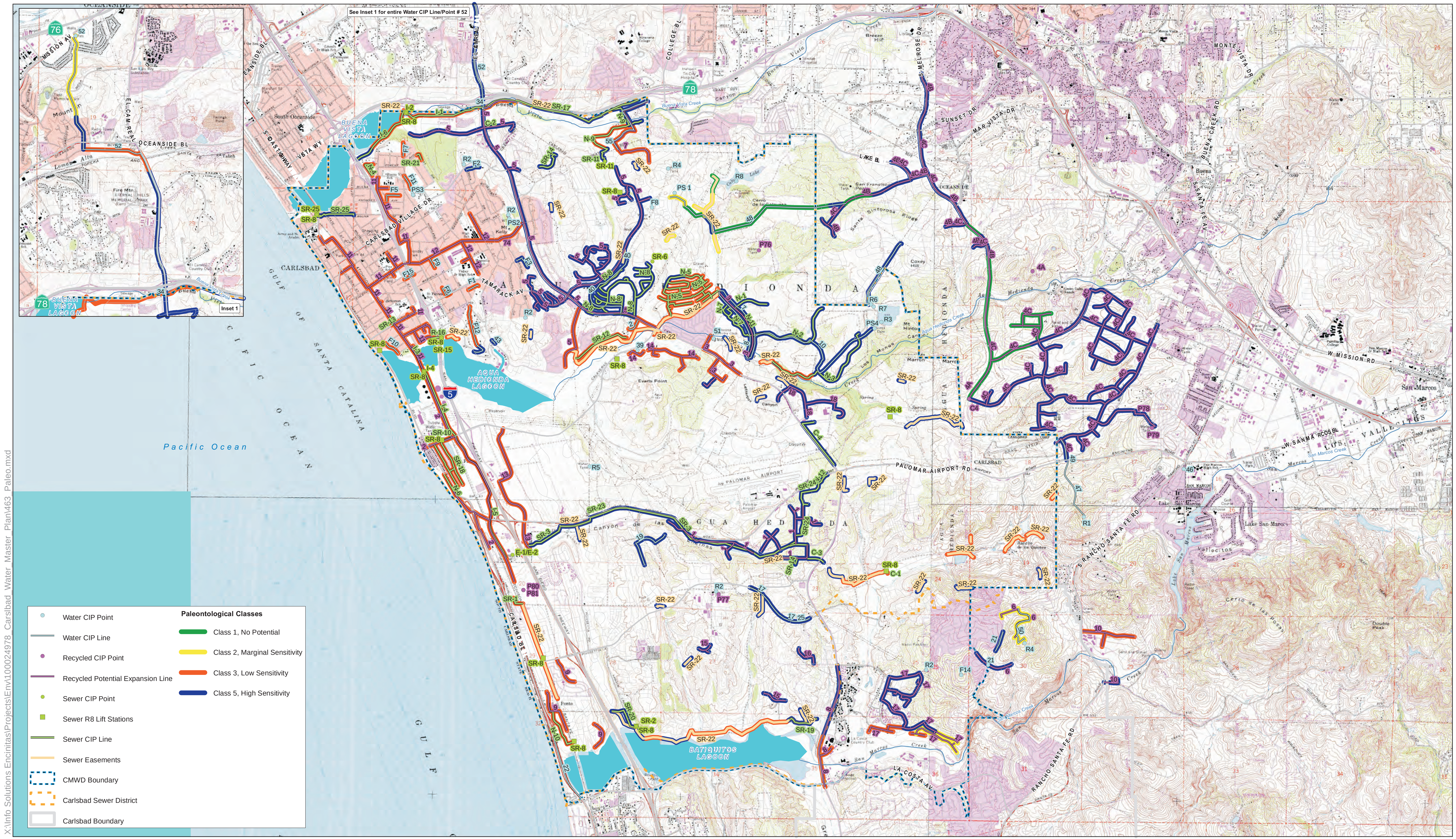

Source: Encinitas, Oceanside, Rancho Santa Fe, San Luis Ray, San Marcos 7.5' USGS Topographic Maps.

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PALEONTOLOGICAL SENSITIVITY
FIGURE 4.4-1

CARLSBAD SEWER, WATER & RECYCLED WATER MASTER PLANS EIR